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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/169,439 10/09/98 SCHMIDT

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IM62/0526

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EXAMINER

FIGUEROA, J

ART UNIT

PAPER NUMBER

1772

DATE MAILED:

05/26/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

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# Office Action Summary

Application No.  
09/169,439

Applicant(s)  
Schmidt et al.

Examiner  
John J. Figueroa

Group Art Unit  
1772



☐ Responsive to communication(s) filed on \_\_\_\_\_

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire three month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-15 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-15 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been  
☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892 ✓

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948 ✓

☐ Notice of Informal Patent Application, PTO-152

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— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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## DETAILED ACTION

### *Double Patenting*

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321© may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claim 6 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of copending Application No. 09/018,217.

Although the conflicting claims are not identical, they are not patentably distinct from each other because Applicants disclose in Spec. Pages 12-13 the metal to be a catalyst which is another term for "activator".

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

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*Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-3 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claim language is indefinite as to what amount or percentage actually constitutes a “net reduction in the oxygen content of the package” or what amount or percentage “achieve[s] a reduction in the oxygen content”.
5. Claims 9, 12 and 14-15 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The phrases “structural polymer” and “structural layer” are vague and unclear.
6. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear from the claim language as to which “polymer” the weight percentage limitation of line 6 is referring to. Is it the scavenging or “structural” polymer?

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*Claim Rejections - 35 USC § 102*

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-4, 6-7 and 14-15 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Speer (US 5,436,644).

Applicants recite, *inter alia*, a method of reducing oxygen in a multilayer package; wherein said package includes an oxygen scavenger layer comprising an oxygen scavenger polymer having a hydrogen alpha to a carbonyl, and a select concentration of a metal, such as 350 ppm of cobalt to achieve a "net reduction in the oxygen content" of the package. In claims 6-7, Applicants limit the polymer to be "solid-stated"; whereas in claims 4 and 14-15, Applicants recite the inner contents of the package to permeate the structural and scavenging layers upon which the oxygen contents is reduced.

Speer discloses a method for reducing oxygen and an oxygen scavenger composition film layer to be incorporated in multilayer food and beverage articles; wherein said scavenger film layer comprises *unsubstituted* ethylenically unsaturated hydrocarbons including oxygen-containing moieties, such as aldehydes, ketones, methacrylates, carboxylic acids and its derivatives; and a transition metal salt, most preferably comprising cobalt. (Col. 2, line 65 to Col. 3, line 41; Col. 4, lines 19-33; Col. 4, line 61 to Col. 5, line 9; Col. 6, line 55 to Col. 7, line 22;

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Col. 15, line 55 to Col. 16, line 10) Speer also discloses that in multilayer articles, the oxygen scavenger layer may be included with oxygen barrier layers such as polyamides (Col. 6, lines 55-66); or comprise layers which are permeable to oxygen allowing a means to regulate the scavenging life of food packages by limiting the rate of oxygen entry to the scavenging component and thus controlling the rate of oxygen consumption. (Col. 6, line 67 to Col. 7, line 22; Col. 8, lines 56-69)

Moreover, Speer discloses examples of oxygen scavenger film layers comprising 500 ppm of cobalt and either an ethylene-butyl acrylate or ethylene-methyl acrylate oxygen scavenging resin. (Examples 5-18, Col. 10-12)

Although Speer does not specifically disclose using solid-stated polymers in the oxygen scavenger film layer, the method of forming an article or composition is not germane to the issue of patentability of the article or composition itself. Therefore, this limitation has not been given patentable weight.

The reference reads on the claims.

9. Claims 1-3 and 6-7 are also rejected under 35 U.S.C. 102(b) as being anticipated by Fransden (US 5,194,478).

Fransden discloses a polymer composition, to be used for scavenging oxygen in packages; wherein said composition comprises a scavenging polymer, preferably MX nylons (polyamides), and an activating transition metal compound/complex. (Column 1, lines 5-10, 37-68; Column 2, lines 1-48; Column 4, line 60 through Column 6, line 10) Moreover, Fransden discloses that

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cobalt is a preferred metal ion to be used together with polyamides in forming the oxygen scavenging composition. (Column 2, lines 48-55)

Particularly, Fransden discloses in Examples 2 and 3 on Columns 3-4 forming an oxygen-scavenging composition comprising cobalt and MXD-6 nylon; and wherein in Table 1, Fransden discloses oxygen rates of nearly zero (0.3) in cans comprising the nylon/cobalt-oxygen-scavenging composition (Column 4, lines 29-60).

Although Cochran does not specifically disclose solid-stating the scavenging polyamides before forming the oxygen-scavenging composition, the method of forming a composition or article is not germane to the issue of patentability of the composition or article itself. Therefore, this limitation has not been given patentable weight.

The reference reads on the claims.

10. Claims 1-3 and 6-7 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Cochran (US 5,021,515)

Cochran discloses a package wall including an oxygen-scavenging layer which has a permeance to oxygen of nearly zero ( $0.3 \text{ cm}^3\text{mm}/\text{m}^2\text{atm day}$ ) including a scavenging composition comprising a scavenging polymer catalyzed by an activating metal compound. (Column 4, lines 25-33; Column 5, 5-10, 23-41, 58-64; Column 5, line 66 to Column 6, line 16; Column 18, line 36 to Column 24, line 53) In addition, Cochran discloses that preferred compositions comprise MXD6 nylons (a polyamide) with cobalt catalysts. (Column 8, line 41 to Column 9, line 14; Column 12, line 49-56)

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Furthermore, Cochran discloses in Example 7 on Column 15, 33 gm preform bottles comprising cobalt and 2% by weight of MXD6 nylon; in Example 17 on Column 17 the preform to comprise cobalt and 4% of MXD6 and 100 ppm of cobalt; and the cobalt fraction of the total composition can be up to 5000 ppm (Col. 8, lines 11-21).

Although Cochran does not specifically disclose solid-stating the scavenging polyamides before forming the oxygen-scavenging composition, the method of forming a composition is not germane to the issue of patentability of the composition itself. Therefore, this limitation has not been given patentable weight.

The reference reads on the claims.

11. Claims 1-4, 6-7, 10 and 12-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Collette (US 5,759,653)

Applicants further recite in claims 10-13 a transparent multilayer preform comprising the previously claimed oxygen scavenger composition layer having a smaller thickness than the rest of the preform; wherein the scavenging polymer is a polyamide having a composition no greater than 15% of the total preform weight.

Collette discloses a transparent three-layer sidewall for a multilayer preform comprising inner and outer virgin-PET layers and an oxygen-scavenging composition core layer to be used in multilayer preforms and containers such as blow-molded recycled-PET beverage bottles; wherein the oxygen-scavenging composition comprises MXD-6 nylon (polyamide) and a transition metal catalyst such as cobalt.. (Column 1, lines 6-18; Column 3, line 50 to Column 4, line 35; Column



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6, line 39 to Column 8, line 11 and Figures 4-7; Column 9, line 60 to Column 10, line 60; Column 13, lines 66-67; Column 14, lines 37-38)

Particularly, in Column 9, lines 60-67, Collette discloses the three layer sidewall to comprise inner and outer virgin PET layers and a core oxygen-scavenging layer comprising 2% by weight of MXD-6. Collette also discloses the weight range of cobalt in the scavenging composition layer to be from 50-1000 ppm (Col. 10, lines 23-37).

Moreover, Collette discloses the preferred proportion by wt. of polyamide in the preform/container to be 2-4%.(Col. 10, lines 48-60) In addition, Collette discloses an alternate five-layer structure having two intermediate oxygen scavenging layers comprising a PET/MXD-6/cobalt blend; wherein said scavenging layers are preferably 4-6% of the total preform weight (providing for very narrow layers as compared to the total thickness of the multilayer structure) which in turn provides optimum barrier protection while maintaining transparency. (Column 9, lines 24-38)

Although Collette does not specifically disclose solid-stating the scavenging polyamides before forming the oxygen-scavenging composition, the method of forming a composition is not germane to the issue of patentability of the composition itself. Therefore, this limitation has not been given patentable weight.

The reference reads on the claims.

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*Claim Rejections - 35 USC § 103*

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 5-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Collette in view of Pushee.

Applicants recite solid stating and heating the scavenger polymer under reduced pressure conditions.

Collette was discussed above in Paragraph #11. Collette does not specifically disclose solid stating or heating the scavenging polymer prior to forming the oxygen-scavenging composition.

However, Pushee teaches that solid stating polymeric resins prior to injection molding causes a chain growth effectively removing undesired impurities used in or produced during the melt phase polymerization of the resin. (Column 1, lines 30-40) Likewise, Pushee teaches that the intrinsic viscosity (I.V.) of the polymer resin may be increased by effectively solid stating the resin prior to injection molding thereby providing a bottle which has a higher orientation and a desired strength while using a minimal amount of resin due to the higher resin I.V. (Column 1, lines 1-40)

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Furthermore, Pushee teaches that the solid stating process involves heating the resin up to a temperature of 180 to 230°C under high vacuum and removing unwarranted condensation products. (Col. 1, lines 30-50)

Therefore, it would have been obvious to a person skilled in the art at the time Applicants' claimed invention was made to solid state the scavenging polymer prior to forming Collette's beverage bottle. One skilled in the art would have been motivated to do so in order to incorporate Pushee's teachings and attain a resultant beverage bottle with superior mechanical properties and is yet more cost-efficient to manufacture.

14. Claims 9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Collette in view of Cochran or Speer.

Applicants recite the scavenging polymer to have a melt index compatible with the "structural" polymer.

Speer, Cochran and Collette were discussed above in Paragraphs 8, 10 and 11 respectively.

Collette does not specifically discuss the melt index properties of the scavenging polyamide.

On the other hand, Cochran teaches that the scavenging composition should have compatible melt blending temperatures in order to form the composition by mixing the composition components together in a slurry or in any desired sequence. (Col. 10, lines 33-60)

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Speer teaches that choosing inappropriate scavenging polymers which are incompatible with other polymers in the structure may adversely affect the clarity, cleanliness and effectiveness of the scavenging polymer. (Col. 5, lines 40-51)

Accordingly, it would have been obvious to a person skilled in the art at the time Applicants' claimed invention was made to choose a scavenging polyamide for Collette's scavenger layer having a melt index compatible with the melt indexes of the other polymer components in Collette's multilayer preform and container. One skilled in the art would have been motivated to do so in order to attain a more effective scavenging layer as taught by Speer and to be able to easily manipulate the process of forming said preform and container as taught by Cochran.

### *Conclusion*

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Figueroa whose telephone number is (703) 305-0582. The Examiner can normally be reached on Monday through Thursday from 8:00 a.m. to 5:30 p.m. The Examiner can also be reached on alternate Fridays.


If the attempts to reach the Examiner are unsuccessful, the Examiner's supervisor, Ellis P. Robinson can be reached by dialing (703) 308-2364. The fax phone number for the organization where this application is assigned is (703) 305-5408.

Application/Control Number: 09/169,439

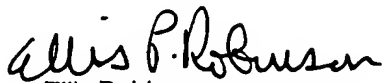
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group Receptionist whose phone number is (703) 308-0661.

jif 

May 20, 1999

  
Ellis Robinson  
Supervisory Patent Examiner  
Technology Center 1700

**Notice of References Cited**Application No.  
09/169,439

Applicant(s)

Schmidt et al.

Examiner  
John J. FigueroaGroup Art Unit  
1772

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**U.S. PATENT DOCUMENTS**

	DOCUMENT NO.	DATE	NAME	CLASS	SUBCLASS
A	5,346,644	9/13/94	Speer et al.	252	188.28
B	5,194,478	3/16/93	Fransden et al.	524	398
C	5,021,515	6/4/91	Cochran et al.	525	371
D	5,759,653	6/2/98	Collette et al.	428	35.9
E	4,392,804	7/12/83	Pushee et al.	425	174.8
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